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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,125	02/05/2004	Sharon A. Elsworth	RTN-194AUS	3259
33164	7590	11/14/2005		
RAYTHEON COMPANY C/O DALY, CROWLEY, MOFFORD & DURKEE, LLP 354A TURNPIKE STREET SUITE 301A CANTON, MA 02021			EXAMINER MATZEK, MATTHEW D	
			ART UNIT	PAPER NUMBER
			1771	
DATE MAILED: 11/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/773,125	Applicant(s) ELSWORTH ET AL.	
	Examiner Matthew D. Matzek	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/27/04; 1/18/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7 and 18-22, drawn to an impregnated fabric, classified in class 442, subclass 59.
- II. Claims 8-17, drawn to a method of impregnating a fabric, classified in class 427, subclass 180.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions because the impregnation compound of claim 8 does not require the composition as listed in independent claim 1.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Don Mofford on 11/08/2005 a provisional election was made without traverse to prosecute the invention of an impregnated fabric, claims 1-7 and 18-22. Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 8-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Instant claims 3 and 4 are rejected as they recite an amount of pre-polymer and curative by weight, but have no point of reference against which to compare the entire weight of the impregnation compound. The use of parts by weight is not equivalent to the use of weight percentage to portray a component's contribution to the impregnation product.
2. Claims 7 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The formula is specific to a particular pre-polymer containing 6.34 isocyanate. However, independent claim fails to mention a pre-polymer containing isocyanate and claim 7 is silent as to manner in which the pre-polymer contains 6.34 isocyanate (i.e. weight percentage or other units). The use of 0.75 as a desired stoichiometry is unclear as it is silent as to what the desired stoichiometry is relative.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 18-19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Haggis et al. (US 3,669,920).

a. Haggis et al. teach a fiber reinforced resin composite comprising carbonized fibers and an isocyanate terminated prepolymer (Abstract). The prepolymer comprises urethane (col. 8, lines 57-59). The applied reference also teaches the use of a curing agent (curative) (col. 8, lines 66-69). To achieve good impregnation of the fibrous article an organic diluent is used (col. 9, lines 43-48). The article may comprise multiple layers (col. 9, lines 53-59). The amount of curing agent to be used will depend largely upon its nature and activity, but is generally less than 10 percent (col. 8, line 74 – col. 9, line 5). Example 7 teaches the use of a solvent as a diluent.

b. Claims 3 and 4 are rejected as the instant limitations of parts by weight are not relative to any total weight of the impregnation composition. As such the pre-polymer and the curative may be 100.0 and 26.1 parts by weight. Claims 18 and 22 are rejected as the applied patent teaches the creation of a multi-layered article that is adhesively bonded via the impregnation polymer. The instant claims do not preclude the first and second resins being the same resin.

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4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Habib (US 4,144,027).

Habib teaches the modification of keratin fibers to reduce their relaxation and felting shrinkage (Abstract). This may be accomplished via a urethane prepolymer of isocyanate (col. 4, lines 1-5). Solvents such as toluene may be used as a diluent (col. 10, lines 14-38). The modification of the fibers occurs through their impregnation (col. 18, lines 3-8). The term "curative stoichiometry range" refers to the molar ratio of -NCO groups to the total active hydrogen atoms. The molar ratio of -NCO groups to the total active hydrogen or curative stoichiometry range can be as low as 0.6 and in Example XI, Table VI the values go as low as 0.40. In compositions of Examples IV and VIII the prepolymer is in an amount of 100.0 parts of weight.

5. Claims 18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Elmendorp et al. (EP 636472).

Elmendorp et al. teach a composite of two or more layers of fibre-reinforced, epoxy resin interspaced with layers of thermoplastic polymer.

6. Claims 18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Cain et al. (US 3,673,611).

Cain et al. teach a molded hat having improved shape retention and recoverability properties comprising a laminate of two or more layers of fabric (Abstract and col. 6, lines 25-29). The layers of the laminate are attached via polymeric adhesive (col. 6, lines 30-36). The layers of fabric have been impregnated with isocyanate reaction product

may be applied to the fabric in pre-polymer form (col. 3, lines 45-47). The fabric may be made of keratin fibers (claim 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Habib (US 4,144,027). Habib is silent as to the use of a co-reactant curative in an amount of 26.1 parts by weight. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the invention of Habib with a co-reactant curative in an amount of 26.1 parts by weight, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 3,673,611) as applied to claim 18 above, and further in view of Habib (US 4,144,027). The article of Cain et al is silent as to the use of a co-reactant curative and a curative stoichiometry range of less than 85 percent in the impregnating composition.

a. Habib teaches the modification of keratin fibers to reduce their relaxation and felting shrinkage (i.e. shape retention) (Abstract). This may be accomplished via a urethane prepolymer of isocyanate (col. 4, lines 1-5). Solvents such as toluene may be used as a diluent (col. 10, lines 14-38). The modification of the fibers occurs through

their impregnation (col. 18, lines 3-8). The term "curative stoichiometry range" refers to the molar ratio of -NCO groups to the total active hydrogen atoms. The molar ratio of -NCO groups to the total active hydrogen or curative stoichiometry range can be as low as 0.6 and in Example XI, Table VI the values go as low as 0.40. In compositions of Examples IV and VIII the pre-polymer is in an amount of 100.0 parts of weight.

b. Since Cain et al. and Habib are from the same field of endeavor (i.e. fabric treatments to improve the shape retention and integrity of the fabric article), the purpose disclosed by Habib would have been recognized in the pertinent art of Cain et al.

c. It would have been obvious at the time the invention was made to have impregnated the article of Cain et al. with the composition of Habib. The skilled artisan would have been motivated by the desire to provide the article with optimized shape retention by the specific curative amount of Habib.

Double Patenting

9. Claims 18 and 23 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10 and 23 of U.S. Patent No. 6,911,955. Although the conflicting claims are not identical, they are not patentably distinct from each other because both recite a multiple layer fibrous composite with the layers attached together via adhesive polymer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdm

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NORCA TORRES
PRIMARY EXAMINER